

WHAT IS CLAIMED IS:

1. An ISDN terminal endpoint comprising:
an ISDN communication protocol stack;
an automatic supplementary service detector, in communication with the ISDN
5 communication protocol stack, to generate an auto-request for an ISDN transaction
that exercises an ISDN supplementary service, and to evaluate the success of the auto-
requests.
2. The ISDN terminal endpoint of claim 1, the automatic supplementary service
10 detector also providing an indication, based on the results of an auto-request
evaluation, of whether the supplementary service is available for use.
3. The ISDN terminal endpoint of claim 2, further comprising a device configuration
register, wherein the indication provided by the automatic supplementary service
15 detector is provided to the device configuration register.
4. The ISDN terminal endpoint of claim 3, further comprising a data router.
5. The ISDN terminal endpoint of claim 4, further comprising a network
20 management agent having access to the device configuration register.
6. The ISDN terminal endpoint of claim 4, further comprising a supplementary
services availability indicator having access to the device configuration register.
- 25 7. A method for operating ISDN terminal equipment connected to an ISDN network

via an interface having at least two B-channels and one D-channel, the method comprising:

transmitting an auto-request, for an ISDN transaction that exercises an ISDN supplementary service, to the ISDN network across the D-channel;

5 receiving an acknowledgment across the D-channel related to the auto-request;

and

evaluating the acknowledgment to determine whether the auto-request was successful.

10 8. The method of claim 7, wherein the step of transmitting an auto-request comprises the step of setting up a call to a directory number associated with the ISDN terminal equipment, thereby generating an incoming call on one of the B-channels.

9. The method of claim 7, further comprising providing, based on the results of the
15 evaluating step, an indication of whether the supplementary service is available for use.

10. The method of claim 7, further comprising enabling, based on the results of the evaluating step, a feature on the terminal equipment in a configuration corresponding
20 to the availability of the ISDN supplementary service.

11. The method of claim 7, wherein the ISDN supplementary service is selected from the group of features comprising call conferencing, call hold, call transfer, call waiting, call forward, and X.25/D channel features.

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12. The method of claim 11, wherein the ISDN supplementary service is call conferencing, wherein transmitting an auto-request comprises:

generating a D-channel call setup request to initiate a first call, using the first B-channel, to a directory number associated with the ISDN terminal equipment;

5 answering the first call using the second B-channel;

generating a D-channel hold request for one of the B-channels; and,

if the hold is acknowledged, initiating a second call using the B-channel of the hold request.

10 13. The method of claim 12, wherein the acknowledgment comprises, when the service is available, a call establishment message from the ISDN network for the second call.

14. The method of claim 12, wherein the hold is requested for the first B-channel.

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15. The method of claim 12, wherein the hold is requested for the second B-channel.

16. The method of claim 11, wherein the ISDN supplementary service is call hold, wherein transmitting an auto-request comprises:

20 generating a D-channel call setup request to initiate a first call, using the first B-channel, to a directory number associated with the ISDN terminal equipment;

answering the first call using the second B-channel; and

generating a D-channel hold request for one of the B-channels,

and wherein the acknowledgment comprises, when the service is available, a hold
25 acknowledgment message from the ISDN network.

17. The method of claim 11, wherein the ISDN supplementary service is call transfer, wherein transmitting an auto-request comprises:

generating a D-channel call setup request to initiate a first call, using the first B-
5 channel, to a directory number associated with the ISDN terminal equipment;
answering the first call using the second B-channel;
generating a D-channel hold request for one of the B-channels; and,
if the hold is acknowledged, initiating a second call using the B-channel of the
hold request to a second directory number associated with the ISDN terminal
10 equipment.

18. The method of claim 17, wherein the acknowledgment comprises, when the service is available, a call setup message from the ISDN network for the second call.

15 19. The method of claim 11, wherein the ISDN supplementary service is call waiting, wherein transmitting an auto-request comprises:

generating a D-channel call setup request to initiate a first call, using the first B-
channel, to a first number; and,
initiating a second call using the second B-channel to the originating directory
20 number associated with the first call.

20. The method of claim 19, wherein the acknowledgment comprises, when the service is available, a message from the ISDN network that a second call is incoming to the originating directory number.

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21. The method of claim 11, wherein the ISDN supplementary service is call forward, wherein transmitting an auto-request comprises:

generating a call forward request to forward calls directed to a first directory number associated with the terminal equipment to a second directory number

5 associated with the terminal equipment; and

placing a call to the first directory number.

22. The method of claim 11, wherein the ISDN supplementary service is an X.25/D channel packet data feature, wherein transmitting an auto-request comprises

10 generating an identity request for an auto-assigned X.25/D channel identity from the ISDN network, and wherein the acknowledgment comprises, when the service is available, a message from the ISDN network indicating that an X.25 D channel has been assigned.

15 23. The method of claim 22, further comprising, when the request for an auto-assigned X.25/D channel identity is denied, stepping through a range of possible terminal equipment identifiers, and for each identifier in the range, generating an identity request for an X.25/D channel identity using that identifier, and determining that the X.25/D channel packet data feature is available when any one of the identity
20 requests is acknowledged by a message from the ISDN network indicating that an X.25 D channel has been assigned.

24. A computer-readable medium containing a program for detecting whether one or more ISDN supplementary services are available on an ISDN BRI, the program

25 having:

an auto-request generator to exercise an ISDN supplementary service;
an auto-request evaluator to evaluate the success of an exercise generated by the
auto-request generator; and
a service availability indicator to indicate whether the exercised service is
5 available.

25. The computer-readable medium of claim 24, wherein the service availability
indicator comprises a network management interface that presents available ISDN
supplementary services as configurable elements of an ISDN connection.

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26. The computer-readable medium of claim 25, wherein the network management
interface comprises an alert display to flag an ISDN supplementary service that is
configured but currently unavailable on the ISDN connection.